

Changes in IANA Service

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Our Key Current Projects

1. Workflow Systems
2. Policy Review
3. Website Development
4. 24x7x365 Emergency Access

1. Workflow Systems

- Aim is to use computer systems to improve request processing.
- Root Zone Management
- Private Enterprise Numbers
- Case Management Software
- Other areas (later)

1.1 Root Zone Management Workflow

- Using NASK's e-IANA software as a starting point.
- Requires development to meet requirements.
- IANA hired a Java Programmer to build and analyse system.
 - Traditionally no in-house Java expertise

1.1 Root Zone Management Workflow (cont.)

- Some of the tasks:
 - Multitude of “Special Instructions” need to be implemented
 - Multiple ACs and TCs, sometimes differing roles/responsibilities (e.g. certain contacts only do certain types of changes)
 - Third parties involved in different ways
 - Private ACs and TCs.
 - Many more esoteric...
 - Integrate with case management, reporting systems
 - External relationships need changing
 - Codifying Technical Checks (mandatory and clarification requests)
 - DNSSEC etc. needs consideration

1.2 Private Enterprise Number Workflow

- PEN allocation significant human resource drain (high volume).
- Ripe for automation.
- System is first bite at a modular system for handling all protocol registries.

1.3 Case Management

- Unified System
 - Until recently, case management spread across multiple systems.
 - Migrated systems to open-source package Request Tracker (RT).
 - Hired creator of RT to do further customisations specific for IANA.
 - Aim is to streamline interaction and reduce overlap.

1.3 Case Management (cont.)

- (un-)Archival project
 - Most historic IANA data is paper
 - Currently digitising all documents and case files
- Better Statistics
 - Expose true IANA states
 - Better (and live) reporting
 - Help identify trouble spots better

1.4 Other areas

- Aim ultimately to have automated workflows for all functions
 - Domain names: root, .int, .arpa etc.
 - Protocol assignments:
 - Registries in a structured format, historically all plain text in varying formats
 - XML using XSL Transforms to present in traditional formats?
- Be realistic about the performance gains likely...

2. Policy Review

- IANA is constrained three ways:
 - Suboptimal policy/procedures
 - Lack of straightforward workflow systems
 - Contractual obligations
- Procedure/policy review will provide the most gains.
- IANA has never had community agreed policy.
 - Any, even tiny, changes are political
- Need to tread lightly
- An example...

Glue Scenario

IANA Records

tld1 NAMESERVER 1: ns1.foo.com - 1.2.3.4
NAMESERVER 2: ns2.foo.com - 1.2.5.55
ADMIN-C: Bill T.
TECH-C: Sarah F.

tld2 NAMESERVER 1: ns1.foo.com - 1.2.3.4
NAMESERVER 2: ns1.bar.com - 50.100.150.250
ADMIN-C: Guenter V.
TECH-C: Karoline W.

tld3 NAMESERVER 1: ns.tld3 - 20.30.20.30
NAMESERVER 2: ns1.foo.com - 1.2.3.4
ADMIN-C: Francois Y.
TECH-C: Madeleine D.

DNS Root Zone

| | | | |
|--------------|----|----|----------------|
| tld1. | IN | NS | ns1.foo.com. |
| tld1. | IN | NS | ns2.foo.com. |
| tld2. | IN | NS | ns1.foo.com. |
| tld2. | IN | NS | ns1.bar.com. |
| tld3. | IN | NS | ns.tld3. |
| tld3. | IN | NS | ns1.foo.com. |
| ns1.foo.com. | IN | A | 1.2.3.4 |
| ns2.foo.com. | IN | A | 1.2.5.55 |
| ns1.bar.com. | IN | A | 50.100.150.250 |
| ns.tld3. | IN | A | 20.30.20.30 |

Glue Scenario (2)

IANA Records

tld1 NAMESERVER 1: ns1.foo.com - 1.2.3.4
NAMESERVER 2: ns2.foo.com - 1.2.5.55
ADMIN-C: Bill T.
TECH-C: Sarah F.

tld2 NAMESERVER 1: ns1.foo.com - 1.2.3.4
NAMESERVER 2: ns1.bar.com - 50.100.150.250
ADMIN-C: Guenter V.
TECH-C: Karoline W.

tld3 NAMESERVER 1: ns.tld3 - 20.30.20.30
NAMESERVER 2: ns1.foo.com - 6.7.8.9
ADMIN-C: Francois Y.
TECH-C: Madeleine D.

NS Change
Request

DNS Root Zone

tld1. IN NS ns1.foo.com.
tld1. IN NS ns2.foo.com.

tld2. IN NS ns1.foo.com.
tld2. IN NS ns1.bar.com.

tld3. IN NS ns.tld3.
tld3. IN NS ns1.foo.com.

ns1.foo.com. IN A 1.2.3.4
ns2.foo.com. IN A 1.2.5.55
ns1.bar.com. IN A 50.100.150.250
ns.tld3. IN A 20.30.20.30

Glue Scenario (3)

IANA Records

tld1 NAMESERVER 1: ns1.foo.com - 1.2.3.4
NAMESERVER 2: ns2.foo.com - 1.2.5.55
ADMIN-C: Bill T.
TECH-C: Sarah F.

tld2 NAMESERVER 1: ns1.foo.com - 1.2.3.4
NAMESERVER 2: ns1.bar.com - 50.100.150.250
ADMIN-C: Guenter V.
TECH-C: Karoline W.

tld3 NAMESERVER 1: ns.tld3 - 20.30.20.30
NAMESERVER 2: ns1.foo.com - 6.7.8.9
ADMIN-C: Francois Y.
TECH-C: Madeleine D.

DNS Root Zone

tld1. IN NS ns1.foo.com.
tld1. IN NS ns2.foo.com.

tld2. IN NS ns1.foo.com.
tld2. IN NS ns1.bar.com.

tld3. IN NS ns.tld3.
tld3. IN NS ns1.foo.com.

ns1.foo.com. IN A 1.2.3.4
ns2.foo.com. IN A 1.2.5.55
ns1.bar.com. IN A 50.100.150.250
ns.tld3. IN A 20.30.20.30

1.2.3.4 or
6.7.8.9?

Glue Scenario (4)

IANA Records

tld1 NAMESERVER 1: ns1.foo.com - 1.2.3.4
NAMESERVER 2: ns2.foo.com - 1.2.5.55
ADMIN-C: Bill T. **CONFIRM REQ'D.**
TECH-C: Sarah F. **CONFIRM REQ'D.**

tld2 NAMESERVER 1: ns1.foo.com - 1.2.3.4
NAMESERVER 2: ns1.bar.com - 50.100.150.250
ADMIN-C: Günter V. **CONFIRM REQ'D.**
TECH-C: Karoline W. **CONFIRM REQ'D.**

tld3 NAMESERVER 1: ns.tld3 - 20.30.20.30
NAMESERVER 2: ns1.foo.com - 6.7.8.9
ADMIN-C: François Y. **CONFIRM REQ'D.**
TECH-C: Madeleine D. **CONFIRM REQ'D.**

DNS Root Zone

tld1. IN NS ns1.foo.com.
tld1. IN NS ns2.foo.com.

tld2. IN NS ns1.foo.com.
tld2. IN NS ns1.bar.com.

tld3. IN NS ns.tld3.
tld3. IN NS ns1.foo.com.

ns1.foo.com. IN A 1.2.3.4
ns2.foo.com. IN A 1.2.5.55
ns1.bar.com. IN A 50.100.150.250
ns.tld3. IN A 20.30.20.30

1.2.3.4 or
6.7.8.9?

Glue Scenario

- Since November 2005:
 - 3 cases already affected multitude of TLDs
 - Case 1
 - Shared by 10 TLDs
 - Requested 14 Nov 2005, completed 8 Dec 2006
 - Was considered emergency (old was lame)
 - Case 2
 - Shared by 15 TLDs
 - Requested 13 April 2005, still outstanding (10.5 months)
 - Case 3
 - Shared by 36 TLDs
 - Requested 22 February 2005, still outstanding (1 week so far)

Glue Scenario

- Current model is broken
 - Worst case: DoS attack/extended brokenness
 - Best case: Is unacceptably convoluted, wastes everyone's time
- Some possibilities (in overview):
 - Promote NS records to first-class objects
 - Dreaded “host” objects, IANA would deal with more parties day-to-day.
 - Host manager saying yes doesn't necessarily solve stability concerns.
 - Disallow shared glue
 - First to use it, gets it; or in-bailiwick only
 - Automatically monitor and accept glue changes as child alters.
 - Other novel ideas...

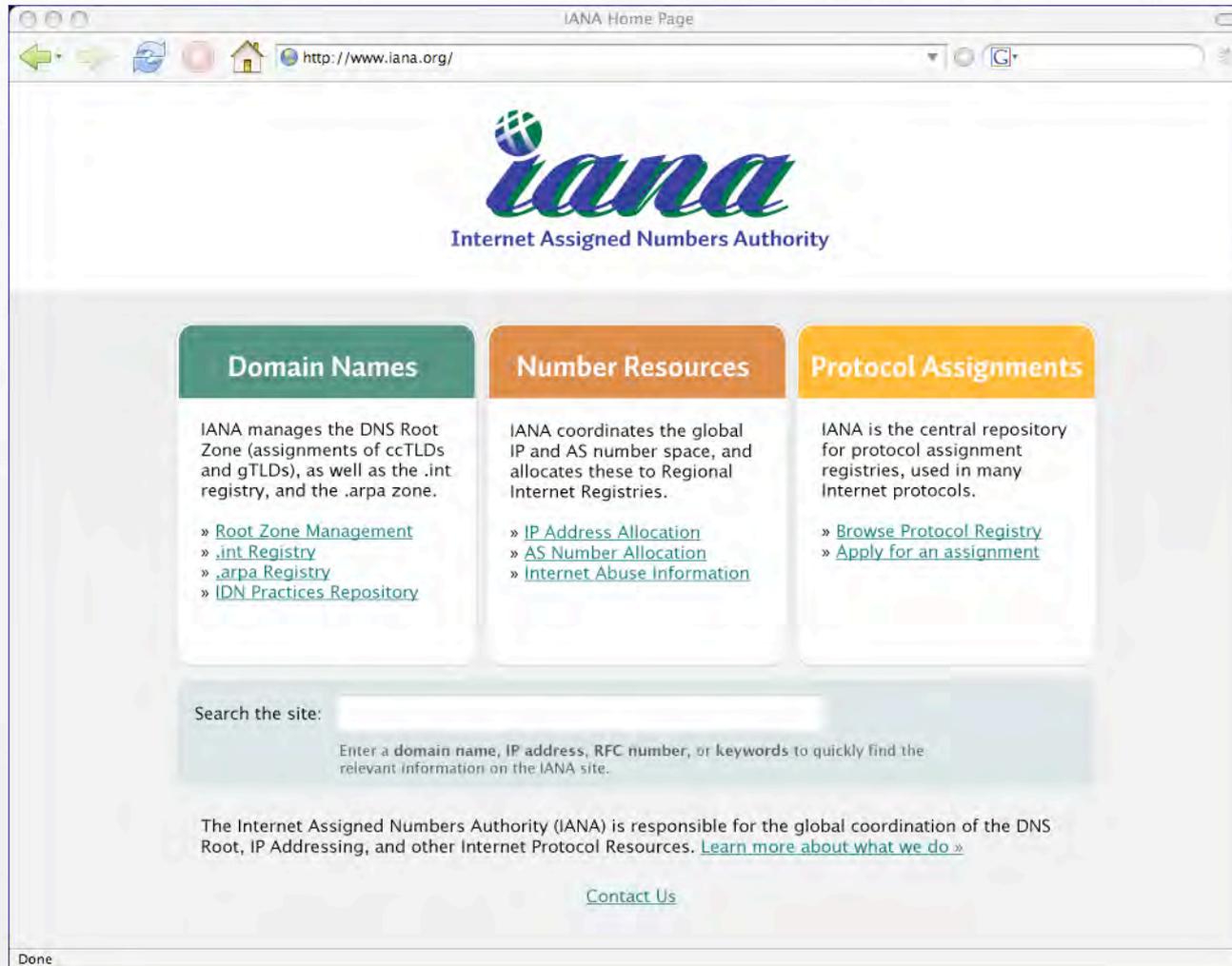
2. Policy Review

- Current work to document and identify policies, procedures, gaps.
 - Historical lack of clear policies and procedures
 - “Grey areas” often are a cause of delay
- Want to institute (first-ever) public reviews
 - RFC 1591 and ICP 1 only really documented ‘current practice’ - didn’t undergo substantive review.
 - Better policies mean we can be more objective in evaluating requests.
 - Is a single PDP going to work? How do we agree this stuff?
 - Need to consult/agree with ccTLDs, gTLDs, SSAC, IAB, etc.
 - Where does IANA draw the line between policy and procedure?
 - When clarified, IANA more liberated to work on procedures without making people angry.

3. Web Site

- Redeveloping to improve service
 - Easier to navigate; more intuitive
 - Highlight automated options
- A lot of robots use www.iana.org
 - Need to preserve pages/URLs
 - API?
- Will iteratively develop with community feedback.

3. Web Site - Homepage Early Concept



3. Web Site - RZM Early Page Concept

SELECT A NAVIGATIONAL TRACK: [About IANA](#) [Domain Names](#) [Number Resources](#) [Protocol Assignments](#)

DNS Root Zone (assignments of ccTLDs and gTLDs), .int registry, .arpa zone.

[SITE MAP](#) [LANGUAGES](#)



Root Zone Management

There are two types of top-level domains, generic and country code, plus a special top-level domain (.arpa) for Internet infrastructure. Generic domains were created for use by the Internet public, while country code domains were created to be used by individual countries as they deemed necessary. Below you will find links to more information about each type of top-level domain, including contact information or links to their registration services:

Maintain



- [TLD Template](#)

Browse



- [ccTLD Index](#)
- [gTLD Index](#)
- [Text Listing](#)
- [IDN Language Tables](#)
- [Geographic Interface](#)

Policy



- [ccTLDs](#)
- [Root Zone](#)

Stats



- [Coming Soon](#)

4. 24x7x365 Emergency Access

- Enable emergency access to IANA staff
- Called for submissions mid-February, deadline end of last week.
 - Evaluating proposals, refining requirements document
- Vetting callers
 - User list / password combination
 - “Is TLD offline, or under imminent threat of becoming so?”
- IANA can’t do it alone
 - Need cooperation with US Gov, VeriSign, etc.

Moving forward

- Aim to demonstrate some of the projects at ICANN Wellington meeting
- Start deploying engineering projects, and then refine and review.
- Continue liaising one-on-one with ccTLDs on how they use IANA, as well as with ccNSO IANA WG; continue learning how IANA works; share insights with community
- Work out how to review IANA's policies, then do it
- Overall: Customer Service Focus in everything we do.

Thankyou for your time

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Internet Assigned Numbers Authority